



THE CITY OF KEY WEST

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Date: April 14, 2018

To: City of Key West Commissioners

From: Jim Scholl, City Manager

Subject: Monroe County Local Mitigation Strategy Progress Report

Background

Monroe County, Florida, and its incorporated municipalities of the Village of Islamorada, City of Layton, City of Key Colony Beach, City of Marathon, and the City of Key West, undertook development of this 2015 Update of the *Local Mitigation Strategy* (LMS) because of its awareness that natural hazards, especially hurricane and flooding hazards, may affect many people and property. The 2015 Update replaces the 2010 and 2005 Updates of the 1999 LMS. The LMS is a requirement associated with receipt of certain federal mitigation grant program funds administered by the Florida Division of Emergency Management (FDEM) and the Federal Emergency Management Agency (FEMA).

Chapter 14.2 of the LMS states: “As required by State statute (Chapter 27P-22) and to ensure the Local Mitigation Strategy is current and continues to serve the interests of residents and visitors, the As required by State statute (Chapter 27P-22) and to ensure the Local Mitigation Strategy is current and continues to serve the interests of residents and visitors, the LMS Working Group will perform an evaluation by comparing the text of the LMS to actual events and status of ongoing or completed mitigation initiatives listed in Chapter 13 and, as applicable, each community’s chapter. If appropriate, annotations will be prepared every year.”

As a requirement to participate in the Community Rating System, the City of Key West, must adopt and annually evaluate the LMS as their floodplain management planning document. The City is required to submit, as part of the annual CRS recertification process, an annual evaluation report on the progress in implementing the LMS. This report is prepared to meet Community Rating System Activity 510 Floodplain Management Planning, Element 512.a. Step 10. implement, evaluate and revise.

The Local Mitigation Strategy Committee has met twice in 2017. The 2018 Local Mitigation Strategy meetings will be dedicated to updating the Local Mitigation Strategy to address post Hurricane Irma short and long-term action items that need to be revised to address post-disaster projects and activities.

A copy of the Monroe County Local Mitigation Strategy (2015) is available at the Monroe County Emergency Management website: www.monroecountyem.com

Annual Progress Report Preparation, Distribution and Availability:

This report was prepared by Lori Lehr, CRS Consultant to the City of Key West and the City of Keys Floodplain Administrator, Scott Fraser. The Monroe County Local Mitigation Strategy Committee is currently updating the action items and projects in the plan as part of the post-Irma recovery effort. This progress report reflects the progress of objective contained in the Monroe County Local Mitigation Strategy prior to September 10, 2017.

The annual progress report is made available to the City Commissioners, the media, and the public via the City of Key West website. A copy of the report is sent annually to the State of Florida NFIP Coordinator's office via email.

Review of action items specific to the City of Key West:

At the March 5, 2015 meeting, three initiatives for the Working Group "as a whole" were discussed and accepted and two initiatives were discussed and added during the June 23, 2015 conference call.

The value of for developing new initiatives and projects to address risk was discussed at both the January and March meetings. Several of the primary initiatives to address flood risk are participation or advancement in CRS program and addressing increase future risk caused by sea level rise. CRS is a priority because it is an established program that provides incentives to take multiple approaches to address flood risk and it provides flood policy holders with discounts once thresholds are met. Several Working Group and community-specific initiatives are geared toward CRS participation.

The basis for the additional initiatives and projects listed in the tables below: *2015 High Priority Mitigation Initiatives: Working Group, Preliminary Identified Mitigation Initiatives – Notice of Intent* and the *Key West LMS NOIs – Irma* are to address areas of greatest risk and hazards with greatest impacts. As a chain of islands, Monroe County is dependent on critical infrastructure along the Overseas Highway right-of-way which if damaged, would have a devastating impact to most residents and businesses. For this reason, evaluating protection of critical infrastructure is a top priority.

2015 High Priority Mitigation Initiatives: Working Group

Key West Initiative 2015- 002	Evaluate protective measures for critical infrastructure and facilities to protect against dynamic hazards including flood, wind, sea level rise, coastal erosion and strong storms.
Jurisdiction/Entity	Key West
Description	Critical infrastructure and facilities provides services that the whole community depends on for basic functioning. Key West will evaluate the need for protecting its critical facilities and infrastructure including energy infrastructure, water/wastewater infrastructure, port facilities, emergency services, and healthcare facilities. This includes hardening, elevating and potential relocation. This initiative supports recommendations from the 2012 Miami-Fort Lauderdale Urban Areas Security Initiative Threat and Hazard Identification and Risk Assessment (THIRA).
Hazards	Strong Storms/Lightning/Tornado, Flooding, Hurricane/Tropical Storm, Sea Level Rise, Coastal Erosion
Potential Funding Sources	Staff time
Estimated Time Frame	Ongoing
Progress	Relocated City Hall from a below flood location to the 500-year floodplain. Relocated the EOC from the 100-year floodplain to the 500-year floodplain. Have determined the next critical facility to be addressed will be First Station #3 located within the 100-year floodplain. That this building should be demolished, elevated well above Design Flood Elevation and Cat. 5 storm hardened.
Initiative 2015-001	Establish a Monroe County CRS User's Support Group
Jurisdiction/Entity	Monroe County and municipalities
Description	Establish a CRS User's Support Group for both current participating jurisdictions, for efforts to improve their ratings, and the other four communities that are looking to join the program. This group initiative supports several of the community specific initiatives. Currently, Layton participates in the Miami-Dade User's Group which is inconvenient due to distance.
Hazards	Flooding, Hurricane/Tropical Storm, Sea Level Rise
Potential Funding Sources	Staff time and external support as needed
Estimated Time Frame	2016
Progress	CRS User's Support Group was formed in early 2016 to facilitate the PPI committee. The User's Group

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	will continue to meet to evaluate the PPI and discuss the CRS post-Irma
Initiative 2015-002	Repetitive Loss Areas (Flood)
Jurisdiction/Entity	Monroe County and municipalities
Description	<p>Verify Repetitive Loss Property Data</p> <p>Monroe County and municipalities that decide to participate in the CRS or that already participate in the CRS will verify the repetitive loss property data obtained from FEMA. The NFIP maintains records of past flood insurance claims and tracks properties that have received multiple claims. These properties and similarly situated buildings present likely opportunities for mitigation. Verifying the data serves two purposes: it helps the NFIP improve its records, and it helps identify Repetitive Loss Areas.</p>
	<p>Prepare Repetitive Loss Area Maps</p> <p>Monroe County and municipalities that prepare Repetitive Loss Area Analyses will identify repetitive loss areas within their jurisdiction using the methods described in FEMA/CRS guidance. The County Growth Management Department will use the identifications, along with the address list of repetitive loss properties provided by the municipalities, to prepare Repetitive Loss Area Maps. Key Colony Beach is preparing its Repetitive Loss Area map in 2015 and a county-sponsored workshop was held on 03/05/15 to help other communities.</p> <p>Identification of Repetitive Loss Areas helps identify property owners who may be interested in reducing their exposure and working with the communities to seek mitigation funds.</p>
Hazards	Flooding, Hurricane/Tropical Storm, Sea Level Rise
Potential Funding Sources	Staff time
Estimated Time Frame	Data verification (annually for CRS communities) Repetitive Loss Area Maps (upon request)
Progress	<p>A closer examination of flood claims data resulted in a reduction of the number of buildings located within such areas, from 1,300 to 1,076.</p> <p>After identifying duplications, the number of RL/SRL properties has been reduced from 225 to 205.</p> <p>GIS heat maps have been created showing flood damage hot spots based separately upon number of flood claims filed and severity of damage</p>

	based upon damage claims paid.
Initiative 2015-003	Support efforts in Monroe County to address the potential negative impacts related to climate change including sea level rise
Jurisdiction/Entity	Monroe County and municipalities
Description	Monroe County is the most vulnerable partner that participates in the SE FL Compact with respect to climate change induced sea level increases. Critical resources like the primary source of drinking water as well as homes, businesses and infrastructure are directly at risk. The LMS should actively support its own Climate Change actions plans (Monroe County and Key West) and support the implementation of a Regional Collaborative Climate Action Plan with the neighboring counties through the Southeast Florida Regional Climate Compact to address the impacts of sea level rise and other related climate change impacts.
Hazards	Flooding, Hurricane/Tropical Storm, Sea Level Rise
Potential Funding Sources	Staff time
Estimated Time Frame	Ongoing
Progress	The City has been working with a consortium of professionals bringing their expertise to focus on communitywide responses for long-term solutions to the impact of rising sea levels. A focus group has toured and evaluated our community and produced a report outlining potential solutions.
Initiative 2015-004	Promote hurricane and flood awareness to residents and businesses.
Jurisdiction/Entity	Monroe County and municipalities
Description	Once residents and businesses become more aware of their risk, they are more likely to take steps to mitigate their property and support community efforts to mitigate. Risk awareness can be challenging in most parts of Florida with long intervals between events and with new residents moving from other parts of the country. The LMS Working Group should actively seek effective risk communication information and opportunities to promote steps businesses and residents can take

	to reduce their flood and hurricane risk.
Progress	<p>Beyond mailings to property owners in Repetitive Flood Loss Areas & local lenders, insurance and real estate agents, City staff have presented as guest speakers before local civic and professional organizations discussing flood damage prevention options.</p> <p>City staff assisted with the organization/staffing of a flood mitigation seminar targeting the general population.</p> <p>City staff held a flood mitigation and funding options workshop targeting property owners in Repetitive Flood Loss Areas.</p>

Discussion of objectives not reached or behind in scheduled implementation:

The Monroe County LMS Work Group maintains an evolving list of project initiatives that includes many site-specific initiatives (Appendix F, as of mid-2015). This list may be modified periodically. The list has three distinct “tabs” that result from distinct steps in the process:

- **Step One: Preliminary Identified Mitigation Initiatives – Notice of Intent** (initiatives may be placed on the list with a minimum amount of information).
- **Step Two: Prioritized Mitigation Initiatives** (when an entity is prepared to seek funding and has sufficient detail, the Characterization Form is completed and the LMS Ranking Subcommittee develops the prioritization ranking).
- **Step Three: Completed/Removed/Unconfirmed Mitigation Initiatives** (initiatives that have been completed, with or without external funding, or which have been removed/dropped, or for which the entity has not provided sufficient information to keep it on one of the other lists).

The table below is the updated *Preliminary Identified Mitigation Initiatives – Notice of Intent Table*. The initiatives were submitted on to the LMS Working Group for inclusion on January 14, 2017. The implementation of the initiatives is noted in the table and have been replaced with post-Irma initiative that are more closely related to the priorities set by the State of Florida for post-disaster grant funding.

Table: Preliminary Identified Mitigation Initiatives – Notice of Intent										
Project #	Project Owner / Sponsor	Project Title/ID	Project Location (County or city?)	Brief Description of Project	Point of Contact	Hazards Address (all that apply)	Mitigation Goals (all that apply)	Estimated Cost	Date submitted	NOTES
11714-1	City of Key West	Caroline Street Outfalls	Key West	To improve the functionality of the outfalls that drain the stormwater from the Caroline Street basin.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$1,570,000	17-Jan-14	Design \$70,000 Construction \$1,500,000

11714-2	City of Key West	20th Terrace & Donald Avenue Gravity Well	Key West	Installation of a gravity well at the intersection of 20th Terrace and Donald Avenue.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-3	City of Key West	Duck Avenue & 19th Street Gravity Well	Key West	Installation of a gravity well at the intersection of Duck Avenue & 19th Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$530,577	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-4	City of Key West	United and Georgia Street Gravity Well	Key West	Installation of a gravity well at the intersection of United and Georgia Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-5	City of Key West	Southward and Grinnell Street Gravity Well	Key West	Installation of a gravity well at the intersection of Southward and Grinnell Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-6	City of Key West	Simonton Street Pump Station Additional Well	Key West	Installation of an additional well at the iSimonton Beach Pump Station.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$360,500	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-7	City of Key West	Donald & 17th Street Gravity Well.	Key West	Installation of a gravity well at the intersection of Donald and 17th Street..	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$530,577	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-8	City of Key West	17th Street & South of N. Roosevelt Gravity Well.	Key West	Installation of a gravity well at the intersection of 17th Street & South of N. Roosevelt.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.

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11714-9	City of Key West	Olivia Street at Pohalski & at Frances Gravity Well.	Key West	Installation of a gravity well at the intersection of Olivia Street at Pohalski & at the intersection of Olivia Street and Frances Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$530,577	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-11	City of Key West	Grinnell & Virginia Street Gravity Well.	Key West	Installation of a gravity well at the intersection of Grinnell & Virginia Street..	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-12	City of Key West	Florida & Olivia Street Gravity Well.	Key West	Installation of a gravity well at the intersection of Florida & Olivia Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-14	City of Key West	14th Street near Stadium Apartments Gravity Well.	Key West	Installation of three gravity wells along 14th Street near Stadium Apartments.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$1,188,949	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-15	City of Key West	14th Street & Stadium Additional Gravity Well.	Key West	Installation of an additional gravity well at 14th Street and Stadium.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-17	City of Key West	Eagle and 20th Outfall.	Key West	Installation of a new outfall at Eagle Avenue and 20th Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$1,705,914	17-Jan-14	Not Complete/Replaced with post Irma project list.

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11714-18	City of Key West	Cindy and 19th Street Outfall.	Key West	Installation of a new outfall at Cindy and 19th Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$2,825,692	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-20	City of Key West	Packer Street at Olivia - Trench or Well	Key West	Installation of an exfiltration trench and gravity well on Packer Street at Olivia.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-21	City of Key West	Casa Marina Court & Reynolds Street Trench	Key West	Installation of an exfiltration trench near Casa Marina Court and Reynolds Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$172,053	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-22	City of Key West	Eisenhower Drive Twin 24" Pipeline	Key West	Installation of two 24" pipeline along Eisenhower Drive to improve drainage to this low land area.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$548,554	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-23	City of Key West	Eagle Avenue between 16th & 17th Street Trench	Key West	Installation of an exfiltration trench Eagle Avenue between 16th & 17th Street Trench.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$406,550	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-24	City of Key West	14th Street Exfiltration Trench	Key West	Installation of an exfiltration trench on 14th Street (north of Flagler Avenue).	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$364,921	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-25	City of Key West	Staples Avenue Exfiltration Trench	Key West	Installation of an exfiltration trench on Staples Avenue.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service /	1,2,3,5,6,7	\$638,471	17-Jan-14	Not Complete/Replaced with post Irma project list.

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						Economic Crisis				
11714-26	City of Key West	4th Street Well or Exfiltration Trench	Key West	Installation of gravity well or an exfiltration trench on 4th Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-27	City of Key West	3rd Street Well or Exfiltration Trench	Key West	Installation of gravity well or an exfiltration trench on 3rd Street.	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$396,316	17-Jan-14	Not Complete/Replaced with post Irma project list.
11714-28	City of Key West	Upsize of William Street and Grinnell Street Outfalls	Key West	Upsizing of William Street and Grinnell Street Outfalls	Jay Gewin	Hurricane / Flooding / Loss of Electric Service / Economic Crisis	1,2,3,5,6,7	\$309,000	17-Jan-14	Not Complete/Replaced with post Irma project list.

Recommendations for new or revised projects:

The table below, *Key West LMS NOIs – Irma* is the updated post-Irma list of indicatives submitted to the LMS Working Group on February 14, 2018. The list represents the Step One: Preliminary Identified Mitigation Initiatives – Notice of Intent that will be prioritized by the LMS Working Group and submitted for potential funding. The list of initiatives may be updated as directed by the LMS Working Group as project funding becomes available and according to the State of Florida project priorities.

Table: Key West LMS NOIs – Irma								
ID Number	Project Title/ID	Project Location	Brief Description	POC	Hazards to be Mitigated	Initial Cost Estimate	NOI Created and Received	Status
City of Key West	Post-Disaster Recovery Plan	Key West	Creation of a master flood disaster recovery plan	Scott Fraser - Sfraser@CityofKeyWest-FL.gov	Flooding, Hurricane, Severe Storm	\$40,000	Yes	Pending funding
City of Key West	Repetitive Loss Property Mitigation Consultant	Key West	Engage consultant to identify suitable privately owned properties that may be eligible for mitigation funding	Scott Fraser - Sfraser@CityofKeyWest-FL.gov	Flooding, Hurricane, Severe Storm	\$50,000	Yes	Completed. FMA funding applied for. Two homes approved for funding.
City of Key West	Fogarty Avenue and 3rd ST Pump Assist Well & Drainage System	Key West	Construction of pump station, injection well, and drainage system to alleviate flooding	John Paul Castro - jcastro@cityofKeyWest-fl.gov	Flooding, Hurricane, Severe Storm	\$4,000,000	Yes	Pending funding

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City of Key West	Residential Dry Flood-proofing Pilot Program	Key West	Create pilot program to gather data supporting creation of national flood-proofing credit for repetitive loss residential buildings	Scott Fraser - Sfraser@CityofKeyWest-FL.gov	Flooding, Hurricane, Severe Storm	\$236,000	Yes	Workshops held, research begun, university alliances created. Structural analysis considerations professionally reviewed.
City of Key West	Harris Avenue and 10th St Expanded Neighborhood Project	Key West	Installation of new storm water outfall with four pollution control structures at Harris Ave & 10th St	John Paul Castro - jcastro@cityofKeyWest-fl.gov	Flooding, Hurricane, Severe Storm	\$5,000,000	yes	Pending funding
City of Key West	Dennis St & Venetia St Outfall	Key West	Construction of stormwater drainage system and tie into existing system outfall	John Paul Castro - jcastro@cityofKeyWest-fl.gov	Flooding, Hurricane, Severe Storm	\$700,000	Yes	Pending funding
City of Key West	Flemming St & Grinnel St Gravity Injection Well	Key West	Construction of gravity injection well with baffle box	John Paul Castro - jcastro@cityofKeyWest-fl.gov	Flooding, Hurricane, Severe Storm	\$400,000	Yes	Pending funding

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City of Key West	White St & Petronia St Gravity Injection Well	Key West	Construction of gravity injection well with baffle box	John Paul Castro - jcastro@cityofKeyWest-fl.gov	Flooding, Hurricane, Severe Storm	\$400,000	Yes	Pending funding
City of Key West	Public Outreach	Key West	Production and presentation of outreach materials to encourage mitigation, including GIS Portals, Library Projects, Special Needs, Real Estate Disclosure, elevation, floodproofing, etc	Alison Higgins - ahiggins@cityofkeywest-fl.gov	Flooding, Hurricane, Severe Storm	\$40,000	Yes	Completed.
City of Key West	Hazard Mitigation Policies Upgrade	Key West	City will conduct overhaul of Land Development Regulations; Additional Mitigation funding will enable planning to implement best management practices toward reducing or eliminating long	Alison Higgins - ahiggins@cityofkeywest-fl.gov	Flooding, Hurricane, Severe Storm	\$15,000	Yes	Completed

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			term risk of wind and flooding					
City of Key West	Hazard Mitigation Community Revolving Loan Fund	Key West	Establish Community Revolving Loan fund to assist residents to capitalize mitigation activities	Alison Higgins - ahiggins@cityofkeywest-fl.gov	Flooding, Hurricane, Severe Storm	\$250,000	Yes	Still in concept phase. May be phased out if PACE gets implemented.

Contact Scott Fraser, City of Key West Floodplain Administrator via phone, 305-809-3810 or email, sfraser@cityofkeywest-fl.gov with any questions concerning this report.